

This summary is to help you understand how the Reasonably Available Control Technology (RACT) rule for lithographic printing may affect your business. This rule was created as a result of the Clean Air Act Amendments of 1990, mandating states with ozone problems to reduce volatile organic compound (VOC) emissions, which are a primary cause of ozone. The specific requirements that apply to your operations will depend upon the location and size of your business as well as what type or types of lithographic presses you operate and the products you use. The actual regulation can be found in section NR 422.142 of the Wisconsin Administrative Code (Wis. Adm. Code).

## ***Does This Regulation Affect My Business?***

This regulation affects your business only if you meet both of the following criteria:

- ◆ If your lithographic printing facility is in an ozone nonattainment county. Wisconsin's ozone nonattainment counties include Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha.
- ◆ If your maximum theoretical emissions of VOCs from all lithographic printing presses at your facility are greater than or equal to 1,666 pounds in any one month.

## ***How Do I Calculate My Maximum Theoretical Emissions?***

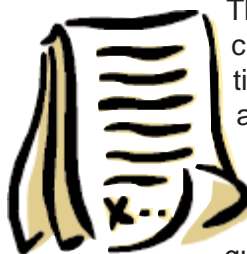
Maximum theoretical emissions (MTE) mean the quantity of VOC emissions that could be emitted if you operated your printing presses at design capacity or maximum production capacity, 730 hours per month ( $\{24 \text{ hr/day} \times 365 \text{ day/yr}\} \div 12 \text{ mo/yr} = 730 \text{ hr/mo}$ ), and did not consider the effects of any air pollution control equipment.

Since this is a hypothetical "worst case" situation, raw materials such as inks, fountain solutions, coatings, blanket and roller washes with the highest VOC content used in practice, should be used for this calculation. However,

to account for VOC retention on the substrate, the rule does allow you to multiply the VOC content of heatset inks by 0.80, and non-heat-set inks by 0.05, for determining the maximum VOC content of inks.

The calculation of MTE is generally set up as the maximum hourly usage of VOC materials times the maximum VOC content of the materials times 730 hours per month. If the MTE is calculated for each printing press, the sum of all the presses equals your facility's total monthly MTE for VOC emissions.

If your monthly MTE is greater than or equal to 1,666 pounds, you may still avoid the requirements of this rule by obtaining an elective operating permit from the DNR that limits your allowable emissions to less than 1,666 pounds per month, or getting a limit included in your operation permit.



The DNR has prepared a special streamlined permit application (DNR Forms 4530-145 and -146) for this purpose that are available by contacting the Bureau of Air Management. Additional guidance on MTE calculations (including real life examples) is available from the Small Business Clean Air Assistance Program (SBCAAP).

## How Does My Business Comply With This Regulation?

There are four areas in which affected businesses must comply. An explanation of each type of compliance requirement is included in this summary. Affected businesses must comply with this rule by July 1, 1996.

The four areas of compliance include:

1. **Emission Limits**
2. **Recordkeeping**
3. **Compliance Testing and Schedule**
4. **Certification Requirements**

### 1. Emission Limits

You need to meet emission limit(s) for each of the following:

- A. Dryer Exhaust (Heatset Web Presses)
- B. Fountain Solutions
- C. Blanket or Roller Wash

#### A. Dryer Exhaust (Heatset Web Presses)

Maintain a lower dryer pressure than the press room pressure at all points inside the dryer and one of the following:

- ❶ Reduce VOC emissions from the exhaust by 90 percent by weight of organic compounds (minus methane and ethane); **or**
- ❷ Maintain a maximum exhaust concentration at 20 ppmv (parts per million volume), as carbon; **or**
- ❸ If exhaust is controlled by a catalytic incinerator installed or modified before January 1, 1982, you must reduce VOC emissions from the exhaust by 85% by weight of organic compounds (minus methane and ethane).

#### B. Fountain Solutions

Heat Set Web Presses - When printing on a substrate other than metal, metal foil or plastic.

- ❶ **1.6% VOC**, by weight as applied, when solution contains restricted alcohol (alcohol containing only one hydroxyl (-OH) and less than five carbon atoms) and is not refrigerated to 60° F or less; or
- ❷ **3.0% VOC**, by weight as applied, when solution contains restricted alcohol and is refrigerated to 60° F or less. (Temperature of the reservoir must be monitored at least once every eight hour shift.); or



- ❸ **5.0% VOC**, by weight as applied, when solution contains no restricted alcohol.

Non-Heatset Web Presses - When printing on a substrate other than metal, metal foil or plastic.

- ❹ **5.0% VOC**, by weight as applied, and solution must contain no restricted alcohol.

Sheet-Fed Presses - When printing on a substrate other than metal, metal foil or plastic.

- ❺ **5.0% VOC**, by weight as applied, when solution is not refrigerated to 60° F or less; or

- ❻ **8.5% VOC**, by weight as applied, when solution is refrigerated to 60° F or less. (Temperature of the reservoir must be monitored at least once every eight hour shift.)

#### Printing on a Metal, Metal Foil or Plastic Substrate

- ❼ **13.5% VOC**, by weight as applied, when solution contains restricted alcohol and is refrigerated to 60° F or less. (Temperature of the reservoir must be monitored at least once every eight hour shift.)

#### C. Blanket or Roller Wash

You must use a blanket or roller wash that either:

- ❶ Has a VOC content no greater than 30 percent by weight; **or**
- ❷ Contains VOC components for which **each** has a vapor pressure of less than or equal to 10 mm of Hg at 68°F.
- ❸ Blanket or Roller Wash Exemptions: your operation may use blanket or roller washes that do not meet the limits above if you:

- Do **not** print on a plastic substrate and use no more than 55 gallons of wash at your facility over any 12 consecutive months.
- Print on a plastic substrate and use no more than 165 gallons of wash at your facility over any 12 consecutive months.

### 2. Recordkeeping

If this rule affects you, you need to keep appropriate records showing that you are in compliance. If you are exempt from this rule, you still need to keep records to support your exemption.

As of July 1, 1996, you will need to keep the following records at your facility for a minimum of five years if you are affected by this rule:

#### *A. Heatset Web*

If you are using a heatset web lithographic printing press with an air pollution control device, you will need to record the following information on each day of operation.

- ❶ Control device monitoring data;
- ❷ A log including operating time of control device, monitoring equipment and associated printing line or operation; and
- ❸ A calibration and maintenance log for monitoring and control device equipment.

#### *B. Fountain Solutions Requiring Temperature Monitoring*

This recordkeeping requirement only applies to refrigerated fountain solutions indicated in the previous fountain solutions limits in 1.B. ❷, ❹, and ❺ above.

- Record temperature of fountain solutions for each eight hour shift of operation.

#### *C. All Fountain Solutions Used*

- Record the percent by weight VOC content as applied, and the chemical name of each restricted alcohol.

#### *D. Blanket or Roller Wash*

- For each blanket or roller wash, record the percent by weight VOC content as applied and the vapor pressure of each VOC component.
- For each month of operation, record the volume of all blanket or roller wash used which does not meet the emission limitations shown in 1.C. above.

### **3. Compliance Testing**

For heatset web lithographic printing presses:

The owner or operator of a heatset web lithographic printing press shall demonstrate compliance with the appropriate emission limit for the dryer exhaust by performing emission tests on each control device. Initial emission tests were due on or before July 1, 1996 for lithographic printing presses installed on or before July 1, 1996; or within 180 days after installation for presses installed after July 1, 1996.

#### **For all lithographic processes:**

The VOC content of lithographic inks, fountain solutions and blanket or roller washes shall be determined in accordance with s. NR 439.06(3)(j), Wis. Adm. Code, which requires EPA Method 24.

The vapor pressure of each VOC in a blanket or roller wash shall be determined by ASTM D2879-92. For more information on the test methods, check with your supplier or contact the DNR.

### **4. Certification Requirements**

For presses installed on or before July 1, 1996, written certification that the press can meet applicable emission limitations and, if applicable, temperature monitoring, was due to the DNR by September 1, 1996.

For presses installed after July 1, 1996, written certification with applicable emission limitations and, if applicable, temperature monitoring, must be submitted to the DNR no later than 180 days after installation, for presses other than heatset web. For heatset web presses, compliance test results must be submitted within 60 days after the compliance test. The certification should be sent to the DNR.

Written certification of compliance should include the following information:

- ❶ Name of facility.
- ❷ Address where printing activities are taking place.
- ❸ Signature of the owner (or the signature of the person at your facility who is responsible for having your business comply with this rule).
- ❹ Statement of compliance with the applicable sections of the rule.

### **Pollution Prevention Tips**

#### **Good Housekeeping**

- Cover all solvents, used clean-up towels and wipes.
- Limit solvent use by using pumps or squeeze bottles, rather than pails, to wet cleanup cloths.



#### **Inventory**

- Order and manage to minimize expiration date of materials.
- Centralize responsibility for storing and distributing solvents.

## **Photochemical**

- Extend lives of photo and film developing baths by adding replenishers and regenerators.
- Keep sensitive process baths covered.

## **Printing Process**

- Use standard sequence on process colors to minimize color changes for presses.

- Properly store oxidizing ink to prevent skin from forming.

## **Cleanup**

- Use automatic blanket washers.
- Use cleanup solution with a lower VOC content or lower vapor pressure.



## ***Contacts for More Information or Assistance.***

The Small Business Clean Air Assistance Program helps smaller businesses understand and comply with the Clean Air Act regulations. Contact one of the program's Clean Air Specialists for more assistance: Renée Lesjak Bashel at 608/264-6153 or Tom Coogan at 608/267-9214.

For further information on the Lithographic Printing RACT contact your DNR Regional or Service Center office shown on the **DNR Contact Fact Sheet** or the DNR's Printing Sector Specialist at 608/355-0811.